

HP StorageWorks

Universal Port Module kit installation instructions

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Universal port module kit installation instructions

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About this guide

These installation instructions provide procedures for setting up, configuring, and managing a UPM kit in a StorageWorks Director 2/64 or a Director 2/140. They describe how to:

- Install the UPM kit.
- Test the UPM kit for proper operation.
- Contact technical support for additional assistance.

Intended audience

These instructions are intended for use by owners of the HP StorageWorks Director 2/64 or the Director 2/140.

Related documentation

For a list of corresponding documentation included with this product, see the Related Documents section of the *HP StorageWorks Director release notes*.

For the latest information, documentation, and firmware releases, please visit the HP StorageWorks web site:





<http://h18006.www1.hp.com/storage/saninfrastructure.html>.

For information about Fibre Channel standards, visit the Fibre Channel Industry Association web site, located at <http://www.fibrechannel.org>.

Document conventions and symbols


Table 1 Document conventions

Convention	Element
Medium blue text: Figure 1	Cross-reference links and e-mail addresses
Medium blue, underlined text (http://www.hp.com)	Web site addresses
Bold font	<ul style="list-style-type: none">• Key names• Text typed into a GUI element, such as into a box• GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
<i>Italics font</i>	Text emphasis
Monospace font	<ul style="list-style-type: none">• File and directory names• System output• Code• Text typed at the command-line
<i>Monospace, italic font</i>	<ul style="list-style-type: none">• Code variables• Command-line variables
Monospace, bold font	Emphasis of file and directory names, system output, code, and text typed at the command line

-  **WARNING!** Indicates that failure to follow directions could result in bodily harm or death.
-  **CAUTION:** Indicates that failure to follow directions could result in damage to equipment or data.
-  **IMPORTANT:** Provides clarifying information or specific instructions.
-  **NOTE:** Provides additional information.

 **TIP:** Provides helpful hints and shortcuts.

Rack stability

 **WARNING!** To reduce the risk of personal injury or damage to equipment:

- Extend leveling jacks to the floor.
 - Ensure that the full weight of the rack rests on the leveling jacks.
 - Install stabilizing feet on the rack.
 - In multiple-rack installations, secure racks together.
 - Extend only one rack component at a time. Racks may become unstable if more than one component is extended.
-

HP technical support

Telephone numbers for worldwide technical support are listed on the HP support web site:
<http://www.hp.com/support/>.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP strongly recommends that customers sign up online using the Subscriber's choice web site at
<http://www.hp.com/go/e-updates>.

- Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.
- After signing up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

HP-authorized reseller

For the name of your nearest HP-authorized reseller:

- In the United States, call 1-800-345-1518.
- Elsewhere, visit the HP web site: <http://www.hp.com>. Then click **Contact HP** to find locations and telephone numbers.

Helpful web sites

For third-party product information, see the following HP web sites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- <http://www.hp.com/support/>
- <http://www.docs.hp.com>

1 Installation instructions

This chapter describes the procedures used for installing a Universal Port Module (UPM) kit into a Director 2/64 or a Director 2/140. This chapter contains the following information:

- [Supported UPM kits](#), page 10
- [Installing UPM cards](#), page 10

Supported UPM kits

HP sells the StorageWorks Director 2/64 with a base configuration of 32 Fibre Channel ports and the StorageWorks Director 2/140 with a base configuration of 64 Fibre Channel ports. HP also sells optional kits to increase the number of ports to a maximum of 64 for the Director 2/64 and a maximum of 140 for the Director 2/140.

Use the procedures described in this chapter for the following UPM kits for both Director switches:

- 8-Port UPM Kit, 300833-B21 (A6574B), which contains (2) Short-wave, 4-port cards, which includes (8) short-wave 2 Gbps SFP optical transceivers
- 4-Port UPM Kit, 316094-B21, which contains: (1) Short-wave, 4-port card, which includes (4) short-wave 2 Gbps small form-factor pluggable (SFP) optical transceivers

Each kit also contains:

- (1) Loop back plug (multi-mode/short wave)
- (1) Port card installation instructions
- (1) Warranty

Installing UPM cards

This section describes procedures to install one UPM card. If you are installing more than one UPM card, ensure that you perform the procedures for all UPM cards you install.

ESD information

△ **CAUTION:** To avoid causing machine errors or damage while working on the director, follow ESD procedures by connecting a grounding cable to the director chassis and wearing an ESD wrist strap.

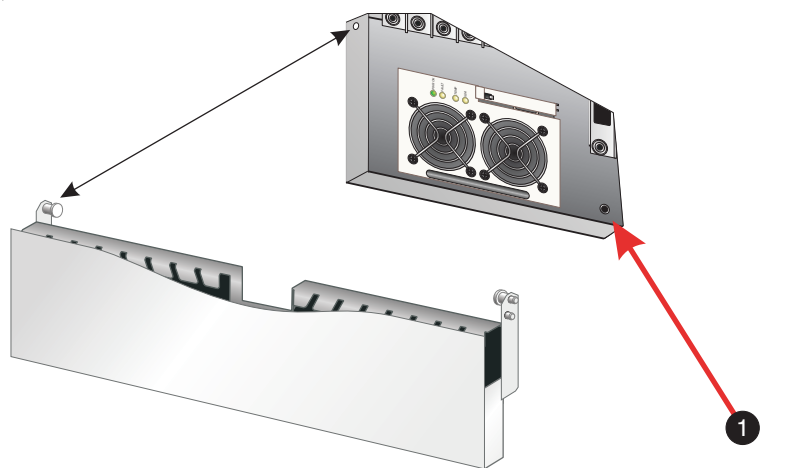
- The ESD grounding point for the front of the Director 2/64 chassis is located at the bottom center, adjacent to the left power supply, as shown in [Figure 1](#).
- The ESD grounding points for the front of the Director 2/140 chassis are located at the front and rear sides of the chassis, as shown in [Figure 2](#).
- The ESD grounding point for the rear of the Director 2/64 chassis is located at the bottom center, directly below the maintenance port, as shown in [Figure 3](#).

Touch the chassis once before performing any maintenance action, and once each minute while installing UPMs. If the director is not connected to facility power (and therefore is not grounded), connect the ESD wrist strap to an approved bench grounding point instead of the chassis.

[Figure 1](#) shows a cable management assembly for the Director 2/64 that is used only with the 9000, 10000, and 11000 series cabinets.

For the Director 2/64, rotate the cable management assembly, if used, to reach the grounding point. The assembly locks into the raised position. Any cables attached to the Director 2/64 are

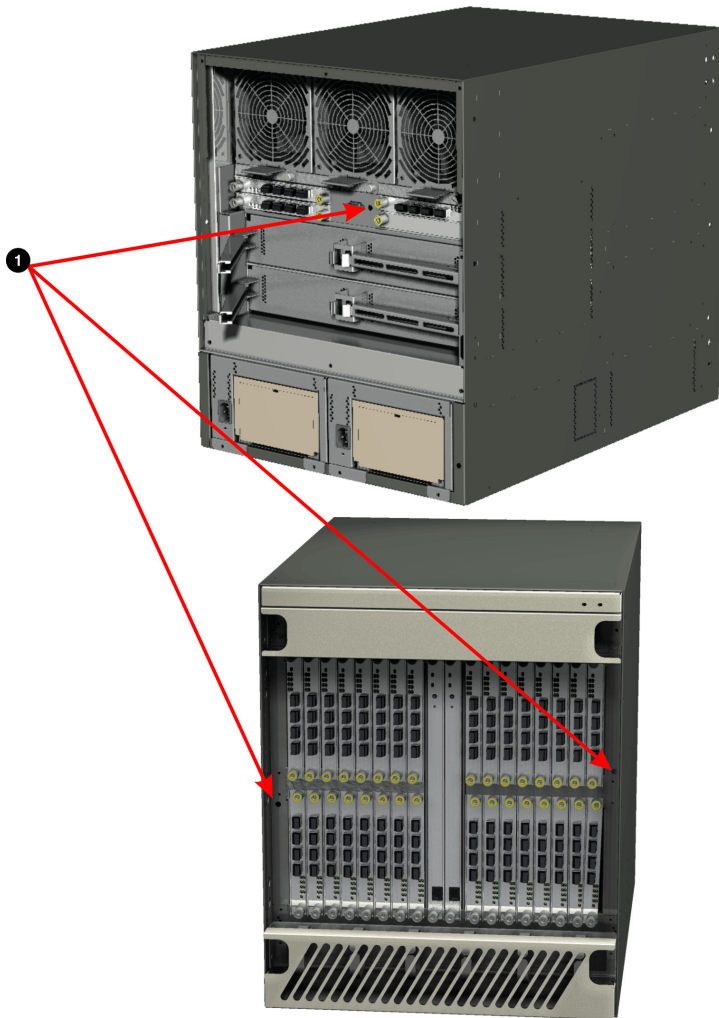
held up, allowing access to the lower front of the chassis. If no cables are attached to the director, the assembly may be removed.



SHR-2299

1 Director 2/64 ESD Grounding Point

Figure 1 Director 2/64 ESD grounding point (front)

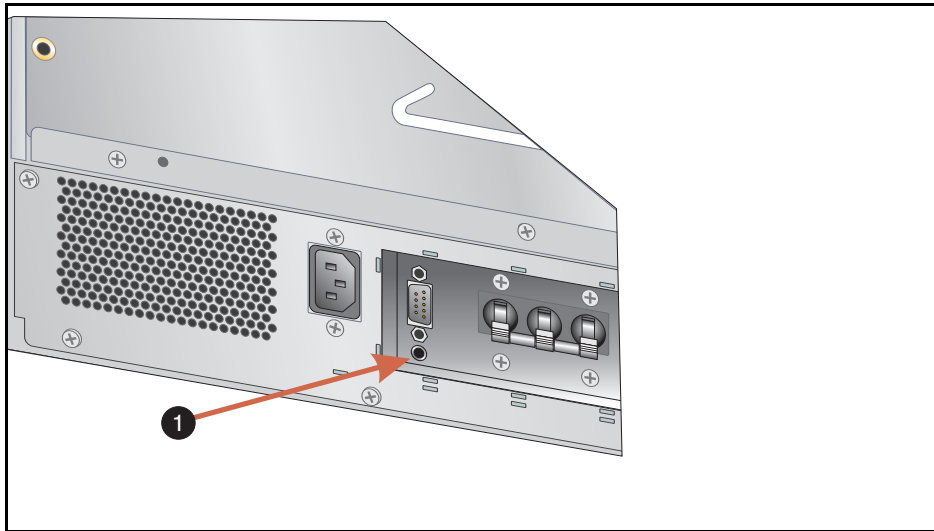


1 ESD grounding points

Figure 2 Director 2/140 ESD grounding points (front and rear)

The ESD grounding points for the front and rear of the Director 2/140 chassis are located next to the maintenance port, as shown in [Figure 2](#).

The ESD grounding point for the rear of the Director 2/64 chassis is located at the bottom center, directly below the maintenance port, as shown in [Figure 3](#).



1 ESD Grounding Point

Figure 3 Director 2/64 ESD grounding point (rear)

Removing the UPM filler blank

Use the following procedure to remove a UPM filler blank. Filler blanks cover and protect unused UPM card slots in the director chassis. The required tools are:

- Torque tool with hex adapter (provided with the director)
- ESD grounding cable and wrist strap

1. Attach a wrist strap to the director chassis.

△ **CAUTION:** To avoid causing machine errors or damage while working on the director, follow ESD procedures by connecting a grounding cable to the director chassis and wearing an ESD wrist strap.

2. If the director is rack-mounted and installed in a custom equipment cabinet, unlock and open the cabinet front door. If the director is installed in a stand-alone configuration, go to [step 3](#).

3. Identify the filler blank to be removed.

The filler blank is secured to the director chassis with two captive Allen screws. Both screws are spring-loaded to lock the filler blank in place.

4. Insert the torque tool into each locking Allen screw, as shown in [Figure 4](#) for the Director 2/64 and [Figure 5](#) for the Director 2/140. Turn each screw counter-clockwise until the spring releases and the tool turns freely.

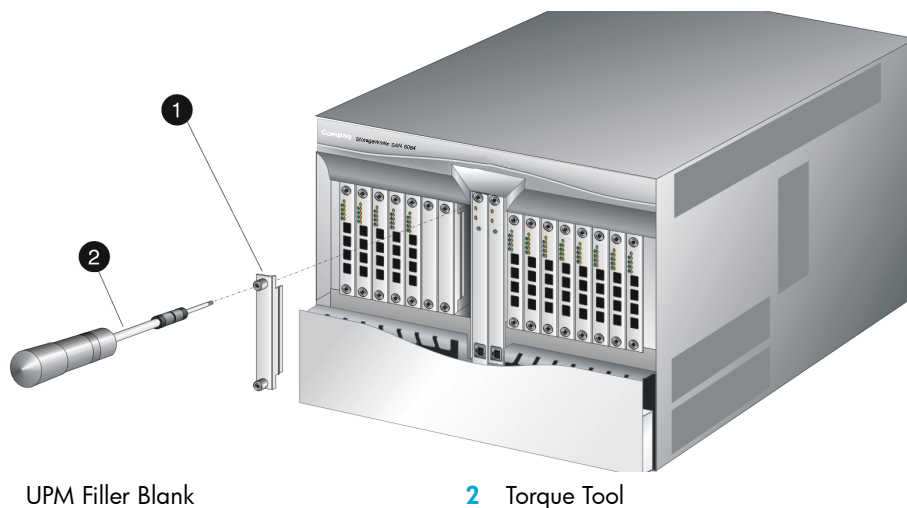


Figure 4 Director 2/64 UPM filler blank removal

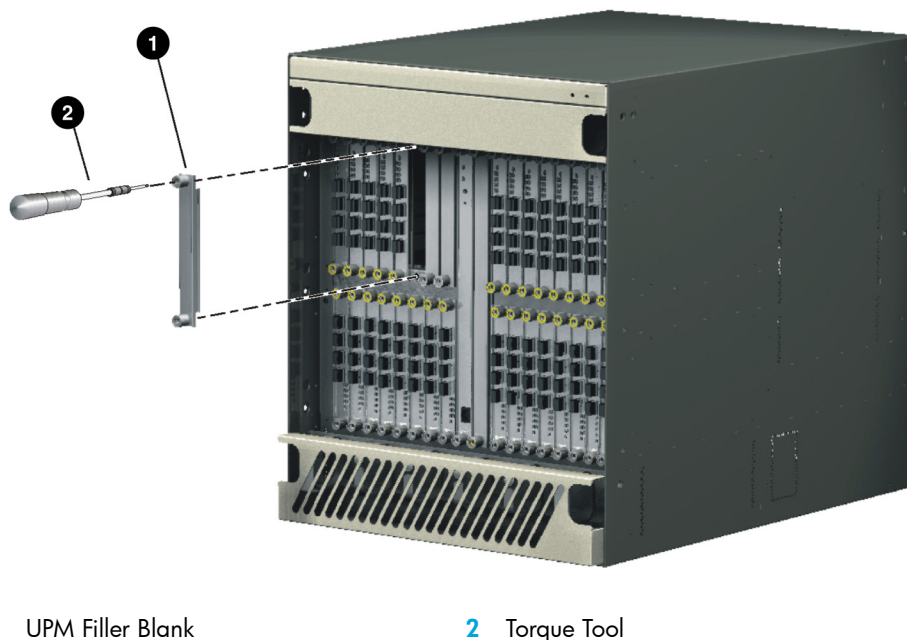


Figure 5 Director 2/140 UPM filler blank removal

5. Pull the filler blank out and remove it from the director chassis.

Installing the UPM card

Use the following procedure to install a UPM card. The required tools are:

- ESD grounding cable and wrist strap
- Torque tool and hex adapter (provided with the director)
- Fiber optic protective plugs (provided with the director)

1. Attach a wrist strap to the director chassis.

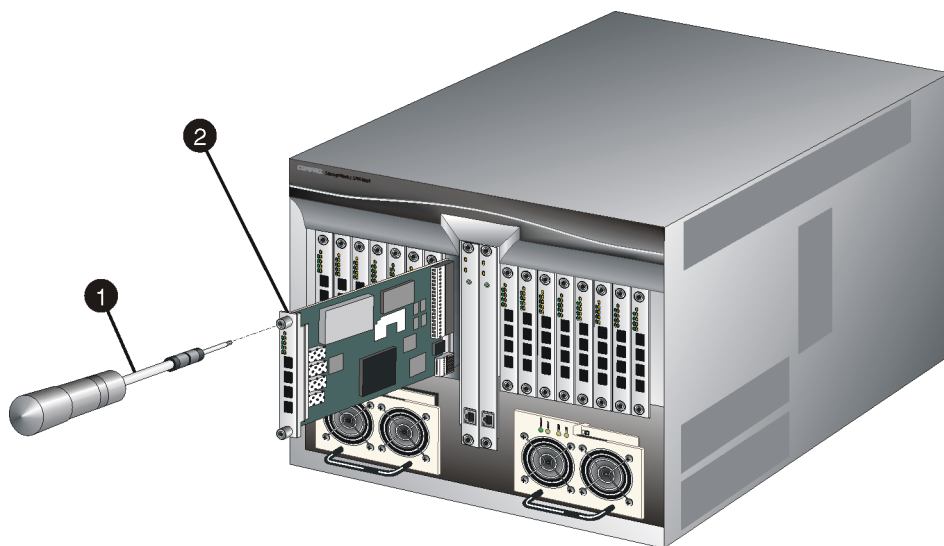
△ **CAUTION:** To avoid causing machine errors or damage while working on the director, follow ESD procedures by connecting a grounding cable to the director chassis and wearing an ESD wrist strap.

△ **CAUTION:** Ensure that protective plugs are inserted into the UPM card optical transceiver receptacles. This prevents damage to sensitive components and prevents injury to the eye if the laser is viewed directly.

2. Remove the UPM card from its protective anti-static bag.

3. Hold the card by its stiffener and insert it in the chassis card track, as shown in [Figure 6](#) for the Director 2/64 and [Figure 7](#) for the Director 2/140.

The yellow locking Allen screw is at the bottom for the Director 2/64, and it aligns with the yellow “lock” symbols on the frame for the Director 2/140. Verify the card is aligned in the card tracks, and then slide it forward until it makes contact with the backplane.

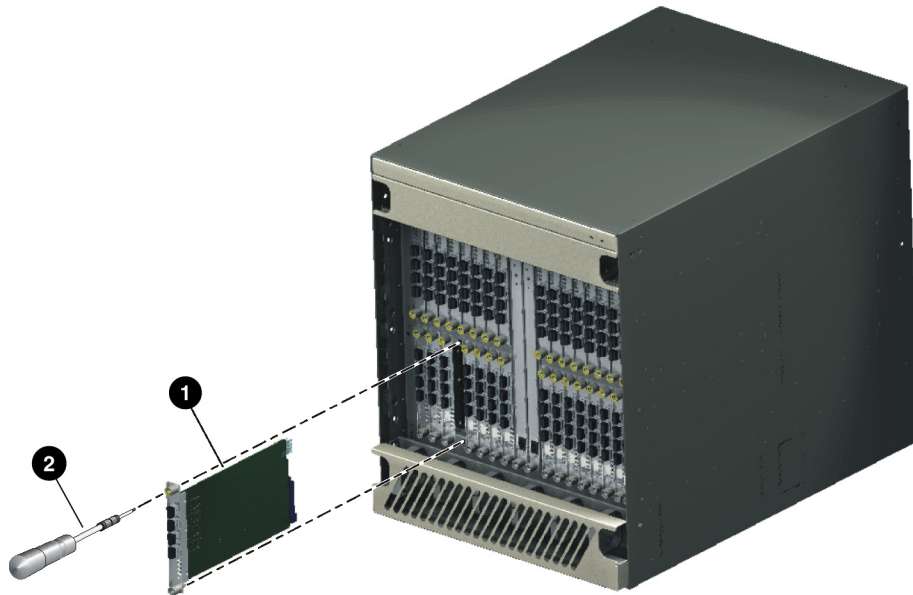


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1 Torque Tool

2 UPM Card

Figure 6 Director 2/64 UPM card installation



1 UPM Filler Blank

2 Torque Tool

Figure 7 Director 2/140 UPM card installation

4. Secure the UPM card as follows:

△ **CAUTION:** The torque tool supplied with the director is designed to tighten logic cards and is set to release at a torque value of six inch-pounds. Do not use an Allen wrench or torque tool designed for use with another HP product. Use of the wrong tool may overtighten and damage logic cards.


- a. Insert the torque tool into the cam Allen screw (uncolored). Turn the torque tool clockwise until you feel it release and hear a clicking sound.
As the screw turns clockwise, the card cams into the backplane connector.
- b. Insert the torque tool into the locking Allen screw (yellow). Turn the torque tool clockwise until you feel it release and hear a clicking sound.
As the screw turns clockwise, the card locks into place.
- c. Verify the card stiffener is flush with the front of the card cage and even with other director logic cards.

5. Perform an external loopback test for all ports on the UPM card. For instructions, refer to ["External loopback test"](#) on page 19 and then return here. If the test fails, see the "Maintenance Analysis Procedures (MAP)" in the Diagnostics chapter of the *HP StorageWorks Director 2/64 service manual* or *HP StorageWorks Director 2/140 service manual* to isolate the problem and then return here.
6. Disconnect the ESD wrist strap from the director chassis and your wrist.
7. Inspect the UPM card to ensure all amber LEDs are extinguished.
If any amber LEDs are illuminated, go to "MAP 0000: Start MAP" of the *HP StorageWorks Director 2/64 service manual* or *HP StorageWorks Director 2/140 service manual* to isolate the problem and then return here.
8. In the HA-Fabric Manager server, open HAFM.
The Product View appears.
9. Double-click the icon representing the director for which the loopback test is performed.
The Hardware View for the selected director appears.
10. From the Logs menu, select **Event Log**.
The Event Log appears.
11. Ensure the following event codes are displayed in the log:
 - 500–UPM card hot-insertion initiated
 - 501–UPM card hot-insertion completedIf an event code 501 is not displayed in the log, go to "MAP 0000: Start MAP" of the *HP StorageWorks Director 2/64 service manual* or *HP StorageWorks Director 2/140 service manual* to isolate the problem and then return here.
12. In the Hardware View, double-click the graphic representing the replacement card to open the Port Card View.
13. In the Port Card View:
 - a. Ensure no alert symbols are displayed that indicate a failure (yellow triangle or red diamond).
 - b. Verify UPM card information (FRU name, position, and state) is correct.
If a problem is indicated, go to "MAP 0000: Start MAP" of the *HP StorageWorks Director 2/64 service manual* or *HP StorageWorks Director 2/140 service manual* to isolate the problem and then return here.
14. Close and lock the equipment cabinet door.
15. Initiate communication to the UPM card and set the card online as needed. For instructions, refer to ["Unblocking a UPM card"](#) on page 22.


External loopback test

Perform the following procedure to do an external loopback test for a single port or a UPM card (four ports).

1. If the UPM card is currently being used in a fabric, notify storage users on the fabric that you will perform a disruptive external loopback test on a port or UPM card, which will disconnect the fiber optic cable or cables. Ensure the system administrator queues Fibre Channel frame traffic through the port or UPM card and sets attached devices offline.

 **NOTE:** IA At the start of the loopback test, the port or UPM card can be online, offline, blocked, or unblocked.

2. In the HA-Fabric Manager server, open HAFM.
The Product View appears.
3. Double-click the icon representing the director for which the loopback test is performed.
The Hardware View for the selected director appears.
4. In the Hardware View, verify the location of the port or UPM card to be tested. When the mouse cursor is passed over a graphical UPM card on the front view of the director, the card is highlighted with a blue border and a pop-up appears with the following information:
 - Port card type (UPM).
 - Chassis slot number (0 through 15 inclusive for the Director 2/64; 0 through 35 inclusive (excluding 32) for the Director 2/140).
 - The four consecutive port numbers on the selected card. Valid port numbers are in the range of 0 through 63 inclusive for the Director 2/64. Valid port numbers are in the range of 0 through 143 inclusive [excluding 128 through 131] for the Director 2/140.
5. Reset each port to be tested:
 - a. In the Hardware View, double-click the UPM card for which ports are to be tested.
The Port Card View appears.
 - b. In the Port Card View, right-click the tested port.
A menu appears.
 - c. Select **Reset Port**.
A `Reset Port n` message box appears, where `n` is the port number.
 - d. Click **OK**.
The port is reset.
 - e. Click **Back To Full View** to return to the Hardware View.
6. Disconnect the fiber optic jumper cable from the port to be tested.
If a UPM card is tested, disconnect all four fiber optic jumper cables.

 **NOTE:** If name server zoning is implemented by port number, reconnect fiber optic cables that were disconnected to perform the loopback test. A cable configuration change disrupts zone operation and may incorrectly include or exclude a device from a zone.

7. If the port to be tested is shortwave laser, insert a multimode loopback plug into the port receptacle. If the port to be tested is longwave laser, insert a single-mode loopback plug into the port receptacle. If an entire UPM card is tested, insert an appropriate loopback plug in all four port receptacles.
8. From the Maintenance menu, select Port Diagnostics.
The Port Diagnostics dialog box appears, as shown in [Figure 8](#).

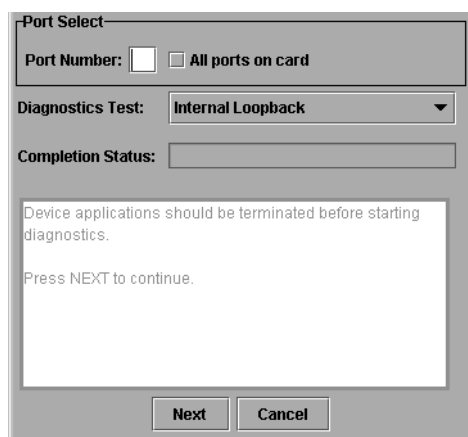


Figure 8 Port Diagnostics dialog box

9. To select a port or UPM card for test, perform one of the following:
 - To select an individual port for test, type the port number in the **Port Number** field.
 - To select a UPM card for test, type the port number of any of the four ports on the card in the **Port Number** field, and then select **All Ports On Card**.
10. In the Diagnostics Test list box, select **External Loopback**.
11. Click **Next**.
Beaconing initiates for the port or UPM card selected for test.
In the Hardware View, a yellow triangle appears at the top of the UPM card. In the Port Diagnostics dialog box, the following message appears:
Loopback plug(s) must be installed on ports being diagnosed.
12. Verify loopback plug(s) are installed and click **Next**.
The following message appears:
Verify selected ports are beaconing.
13. Verify beaconing is enabled, and then click **Next**.

The following message appears:

Press `START TEST` to begin diagnostics.


The Next button changes to **Start Test**.

14. Click **Start Test**.

The test begins and:

- The Start Test button changes to **Stop Test**.
- The message `Port xx: TEST RUNNING` appears. The `xx` is the port number. If a UPM card is tested, the message appears for all four ports.
- A red progress bar indicating percent completion travels from left to right across the Completion Status field.

As an individual port is tested, the amber LED flashes (beacons) and the green LED illuminates indicating loopback traffic through the port.

 **NOTE:** Click **Stop Test** at any time to abort the loopback test.

When the test completes, test results are displayed for each port tested as `Port xx: Passed!` or `Port xx: Failed!` in the message area of the dialog box. If a port fails the test, the amber LED for the port remains illuminated.

15. When finished, click **Cancel** to close the Port Diagnostics dialog box and return to the Hardware View.

Beaconing is disabled for the port or UPM card.

16. Reset each tested port:

- a. In the Hardware View, double-click the UPM card for which ports were tested.
The Port Card View appears.
- b. In the Port Card View, right-click the tested port.
A menu appears.
- c. Select **Reset Port**.
A `Reset Port n` message box appears, where `n` is the port number.
- d. Click **OK**.
The port is reset.

17. Remove loopback plug(s) from the tested ports.

18. Reconnect fiber optic jumper cables from devices to tested ports.

Unblocking a UPM card

Perform the following procedure to unblock all four ports on a director UPM card.

1. Open the HAFM and log in.
The Product View appears.
2. Double-click the director icon for which the UPM card will be unblocked.
The Hardware View appears.
3. Double-click the UPM card to be unblocked.
The Port Card View for the selected card appears.
4. Move the cursor over the UPM card to be unblocked (but not over an individual port) and right-click the mouse to open a list of menu options.
5. Select the **Unblock All Ports** option.
The Unblock All Ports dialog box appears, as shown in [Figure 9](#).



Figure 9 Unblock All Ports dialog box

6. Click **Yes**.
The following occurs to indicate the UPM card is unblocked, and the attached devices are online:
 - Emulated green LEDs associated with all four ports are illuminated in the Port Card View.
 - Green LEDs associated with all four ports are illuminated in the director.
7. Click **Back to Full View** to return to the Hardware View.
8. Clear the amber system error LED on the director bezel as follows:
 - a. Right-click the front panel bezel graphic (away from a FRU) to open a list of menu options.
 - b. Select the **Clear System Error Light** option.